

**Remarks**

Claims 1-22 are pending.

Continued appreciation is expressed for the indication of allowability of claims 3, 10-12, and 22. However, at this time the applicants choose to defer amendment of these claims until they have had the opportunity to traverse the Examiner's rejections.

**Rejection of Claims under 35 U.S.C. § 103**

Claims 1, 2, 4-6, 13-16, 19-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yim, U.S. Patent Application Publication No. 2003/0206527, and in view of Hluchyj et al., U.S. Patent No. 5,426,640. The applicants respectfully traverse these rejections.

Yim and Hluchyj taken alone or in combination neither teach nor suggest a method including:

determining a shortest path to a destination node including identifying one of the first and second rings as being associated with the shortest path; and

determining if the identified one of the first and second rings is more congested than the other of the first and second rings using the transit delay data;

as required by independent claim 1, and generally required by independent claims 20 and 21.

Regarding the claimed "determining if the identified one of the first and second rings is more congested . . . ," the Examiner continues to refer to paragraph 0021 of Yim which states:

[0021] The message processors may perform their selection on the basis of information obtained from a look-up table. The look-up table may contain information about the number of ring links along which a data message has to travel along each ring between the nodes to reach its destination so that the shortest route for the data message can be determined. The look-up table may also contain information about the data flow rate or traffic loading on each ring. Thus when one ring contains a lot of traffic and is congested, another ring may be selected. The look-up table is preferably dynamically updated for each new data message to be sent. For this purpose, counting means may be provided for

counting the number of messages queued for transmission at a node or nodes of the system.

Thus, the cited portion of Yim discloses using ring link information to determine a shortest route for ring selection, and also discloses using ring congestion information for ring selection. However, Yim neither teaches nor suggests first identifying a ring based on a shortest path, and then determining if *the identified ring* is more congested than another ring. The cited portion of Yim simply discloses both types of analysis, but not use of the analysis together, and particularly not use together in accordance with the applicants' claims.

Further reference to Yim emphasizes this point. Paragraphs 0052-0054, and 0060 describe how Yim uses ring link and traffic loading information:

[0052] Node Cost ( $N_c$ ), being the number of ring links a message has to pass through to reach the destination node;

[0053] Traffic Loading ( $T_{ld}$ ), being the number of messages queued for transmission;

[0054] Combined Cost ( $C_c$ ), being the sum of  $N_c$  and  $T_{ld}$ ;

[0060] When a message arrives at step 200, the source address and destination address are set to  $S_n$  and  $E_n$  respectively, at step 202, to initiate the search of the dynamic table at step 204. A comparison is then performed at 206 to see if the combined cost, i.e.  $C_c = N_c + T_{ld}$ , has exceeded the limit of  $TL_m + N_c$ . If it has exceeded the limit the message is rejected at 208. For example, if the traffic loading  $T_{ld}$  exceeds the maximum traffic load  $TL_m$ , when a new message is to be transmitted, that message is rejected. If it does not exceed the limit a decision is made at 210 as to whether all entries returned from the dynamic table have the same combined cost,  $C_c$ . If they do have the same  $C_c$ , the traffic balancing concept is applied wherein a comparison is made to see if the Ring Identity,  $R_{id}$ , equals the Next Ring Used,  $NR_u$ , at 212. If it is the same, then that ring is used at 214, and for all entries returned, the traffic loading of that same ring is updated by incrementing the value of  $T_{ld}$  by 1, at 216. If  $R_{id}$  does not equal  $NR_u$  then the next ring used is updated by incrementing the value of  $NR_{ld}$  by 1 at 218. This will also occur for those returned entries that had  $R_{id} = NR_u$ . If the next ring used exceeds the total ring  $R_t$  at 220, the next ring used will be set to 1 at 222 and the process ends at 224. If the next ring used does not exceed  $R_t$  the process is stopped at 224.

As demonstrated in these paragraphs, Yim teaches using the *combined* node cost and traffic loading in aggregate to make ring selection decisions. Yim neither teaches nor suggests the applicants' identifying a ring based on a shortest path, and then determining if the identified ring is more congested than another ring. In fact, Yim fails to teach or suggest making ring selection based on a shortest path *determination*, as set out in the applicants' claims. Again, Yim simply aggregates various cost factors (e.g.,  $N_c$  and  $T_{ld}$ ) into a single value that is used to make a ring selection.

In response to similar arguments presented by the applicants in their Response of May 31, 2005, the Examiner states:

On page 10 Applicants argue that Yim neither teaches nor suggests the applicant's identifying a ring based on a shortest path. Examiner respectfully sees this argument as irrelevant because it is directed to the subject that was not directly claimed. The claim does not specify that a ring be selected based on a shortest path. (Office Action of August 9, 2005, p. 8, no. 4)

While the Examiner is correct that the applicants do not explicitly claim "identifying a ring based on a shortest path," that statement made by the applicants accurately paraphrases claim limitations presented. For example, claim 1 states: "determining a shortest path to a destination node *including identifying one of the first and second rings as being associated with the shortest path.*" Emphasis added. Thus, the recited determining explicitly includes an operation where one of the first and the second rings is identified as being associated with the shortest path, i.e., identifying a ring depending (at least in part) on its association with the shortest path. The applicants respectfully submit both the referenced paraphrase, and more importantly the argument presented in connection with the referenced paraphrase, are not "irrelevant."

The Examiner's Response to Arguments completely ignores the applicants' central argument, i.e., that Yim fails to teach or suggest two *related* operations: (1) first determining a shortest path to a destination node including identifying one of the first and second rings as being associated with the shortest path, and then (2) determining if the *identified one of the first and second rings* is more congested than the other of the first and second rings using the transit delay data. The Examiner simply ignores this

deficiency in Yim, and provides no response to the applicants' argument. As noted in detail above, Yim fails to teach or suggest using the two types of analysis (shortest path and congestion) together, let alone in the manner required by the applicants' claims.

The Examiner refers to Hluchyj regarding the use of transit delay data, and goes on to state that "[i]t would have been obvious to one of ordinary skill in the art . . . to implement the teaching of Hluchyj in determining congestion level by measuring the depth of transit queues into Yim so that congested information is used to select the other ring with less congestion for routing a packet and thereby reduce network congestion and improve network utilization." Office Action of August 9, 2005, p. 3, bottom. The applicants continue to submit that the Examiner has failed to establish a *prima facie* case of obviousness. In addition to the claim elements not taught or suggested by the cited references as described above, the Examiner has not shown that there is some suggestion or motivation to combine Yim and Hluchyj, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Neither reference suggests such a combination. Moreover, the applicants respectfully submit that the Examiner has failed to explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination, as required by, for example, *In re Rouffet*, 47 USPQ2d 1453 (Fed. Cir. 1998). The applicants also note that the purported motivation to combine, i.e., "so that congested information is used to select the other ring," would not motivate one of ordinary skill in the art to combine the two references because Yim alone already teaches using congestion information to select a ring, as noted in the Examiner's reference to Yim's paragraph 0021. Thus, one having ordinary skill in the art would not be motivated to look beyond Yim itself.


In response to similar arguments presented by the applicants in their Response of May 31, 2005, the Examiner states:

Examiner respectfully sees this argument as misplaced. Examiner relied on Hluchyj in utilizing transit delay data as a mean of indicating congestion level. (Office Action of August 9, 2005, p. 8, no. 4)

Again, the Examiner misapprehends the nature of the applicant's argument. At issue is not the claim limitation for which Hluchyj is relied upon, but rather the justification presented by the Examiner in combining Yim and Hluchyj. The Examiner's purported motivation or suggestion to combine the references is "so that congested information is used to select the other ring with less congestion for routing a packet and thereby reduce network congestion and improve network utilization." However, the applicants have pointed out that (and the Examiner has not refuted these points): (1) the references themselves do not provide this motivation, (2) the Examiner points to no knowledge generally available to one of ordinary skill in the art justifying the combination, and (3) one of ordinary skill would *not* be motivated to combine the two references because Yim alone already teaches using congestion information to select a ring, as noted in the Examiner's reference to Yim's paragraph 0021, i.e., there is no need to look beyond Yim to satisfy the Examiner's stated motivation.

Accordingly, the applicants respectfully submit that independent claims 1, 20, and 21 are allowable over Yim and Hluchyj taken alone or in combination. Claims 2-19 depend from claim 1 and are allowable for at least this reason. Claim 22 depends from claim 20 and is allowable for at least this reason.

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

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| I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on <u>Sept 1</u> , 2005. |                                    |
| <br>Attorney for Applicant(s)   | <u>9/1/05</u><br>Date of Signature |

Respectfully submitted,



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